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(54) **Method of inhibiting corrosion of zirconium or its alloy.**

(57) The invention is to provide zirconium or its alloy used as a material for a chemical device and a nuclear reactor etc. is surface-treated with an oxidizing acid containing an oxidizing metal ion. The oxidizing acid is at least one member or a mixture of two or more selected from the group consisting of, for example, nitric acid (HNO_3), hydrogen peroxide (H_2O_2), hypochlorous acid (HClO) and potassium permanganate (K_2MnO_4) solution, among which nitric acid is most preferred. The oxidizing metal ion is at least one member selected from the group consisting of, for example, ruthenium, rhodium, palladium, osmium, iridium, platinum, chromium, vanadium and cerium ions. Particularly preferred treatment conditions comprise a nitric acid concentration of 14 mol/ℓ (65 %) which is close to an azeotropic concentration, a ruthenium ion concentration of at least 1×10^{-3} mol/ℓ and a treatment temperature of a boiling temperature (120°C). The surface of zirconium or its alloy to be treated may be washed previously with an aqueous acid solution containing hydrofluoric acid. The method of inhibiting corrosion of zirconium or its alloy by surface-treating it with an oxidizing acid containing an oxidizing metal ion can be formed easily a uniform protective film on the surface thereof.

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EUROPEAN SEARCH REPORT

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EP 85 10 3231

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
X	GB-A-2 097 024 (HITACHI) * Claims 1,11; pages 17,18, examples 3.5 *	1-3	C 23 C 22/54
A	GB-A-1 387 333 (IMPERIAL CHEMICAL INDUSTRIES) * Claim 1; page 2, lines 35-53 *	1,2	
D,A	PATENTS ABSTRACTS OF JAPAN, vol. 7, no. 122 (C-168)[1267], 26th May 1983; & JP-A-58 39 785 (KOBE SEIKOSHO K.K.) 08-03-1983 * Abstract *	1,4	
A	DE-C- 863 280 (AMERICAN CHEMICAL PAINT)		
A	US-A-2 977 204 (D.W. SHANNON)		TECHNICAL FIELDS SEARCHED (Int Cl 4)
A	BE-A- 653 789 (COMMISSARIAT DE L'ENERGIE ATOMIQUE)		C 23 C 22/00 C 23 G 1/00 C 23 F 3/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	04-11-1986	TORFS F.M.G.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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